Relocatable In-Flight Interceptor Communications System Data Terminal #2 at Vandenberg Air Force Base

Final

Supplemental Environmental Assessment

19 October 2007

Department of Defense
Missile Defense Agency
7100 Defense Pentagon
Washington, DC 20301-7100

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
19 OCT 2007		**00-00-2007 to 00-00-2007**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Relocatable In-Flight Interceptor Communications System Data Terminal #2 at Vandenberg Air Force Base	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Army Space and Missile Defense Command,PO Box 1500,Huntsville,AL,35807**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**52**	

FINDING OF NO SIGNIFICANT IMPACT
for
RELOCATABLE IN-FLIGHT INTERCEPTOR COMMUNICATIONS SYSTEM DATA TERMINAL #2 AT VANDENBERG AIR FORCE BASE SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

AGENCY: Missile Defense Agency

BACKGROUND: The Missile Defense Agency (MDA) is responsible for developing, testing, and deploying the Ballistic Missile Defense System (BMDS). The BMDS is designed to intercept threat missiles during all phases of their flight: boost, midcourse, and terminal. Ground-Based Midcourse Defense (GMD) is an element of the midcourse defense, during which the Ground-Based Interceptors (GBIs) intercept and destroy long-range missiles during the ballistic (midcourse) phase of their flight before their reentry into the Earth's atmosphere. According to May 2003 National Policy on Ballistic Missile Defense Fact Sheet, the President directed the Department of Defense (DOD) to field a set of initial missile defense capabilities beginning in 2004. In support of this directive, MDA/GMD established operational GBI launch facilities at Vandenberg Air Force Base (AFB), California, as part of an initial defense of the United States from a limited ballistic missile attack. This included a Relocatable In-Flight Interceptor Communications System Data Terminal (RIDT), which was constructed on North Vandenberg AFB in 2005. The RIDT provides a communications link between the GMD Fire Control (GFC) components of the GMD element and the GBI during system testing and during an actual missile attack against the United States, its friends, or allies. These activities were previously analyzed in the *GMD Extended Test Range Final Environmental Impact Statement* (ETR EIS), July 2003, and the *GMD Initial Defensive Operations Capability at Vandenberg Air Force Base Environmental Assessment* (IDOC EA), August 2003, respectively.

The MDA prepared this Supplemental Environmental Assessment (SEA) to evaluate the potential environmental consequences of constructing and operating a second RIDT at Vandenberg AFB. The attached SEA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and its implementing regulations, 42 United States Code 4321 et seq. and 40 Code of Federal Regulations (CFR) 1500-1508, respectively; 32 CFR Part 651, *Environmental Analysis of Army Actions*; and Air Force Instruction 32-7061, *Environmental Impact Analysis Process.* The purpose of the Proposed Action is to provide a second RIDT at Vandenberg AFB at a site adjacent to the existing RIDT for the purpose of providing redundancy to the current operational GMD components, and allow for concurrent Test, Training, and Operations. With two RIDTs, either RIDT can remain in full operational mode when the other participates in a test and/or training event. This SEA supplements the IDOC EA by analyzing the potential environmental impacts that might result from the construction and operation of a second RIDT.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES: The Proposed Action is to construct and operate a second RIDT at a site adjacent to the existing RIDT along El Rancho Road on Vandenberg AFB. This would be an operational facility with test and training capability.

An In-Flight Interceptor Communications System Data Terminal (IDT) is a Super High Frequency radio transmitter and receiver that provides communications between the GFC Components and the GBI. The only time the IDT emits is when a GBI has been launched for flight-testing or in defense operations, or during system calibration. Flight test frequency is discussed in the ETR EIS. Calibration may occur approximately twice per year. An RIDT is made up by the integration of the compound, facilities, antenna, communications node equipment, long haul communications, and embedded test and training capability. Long haul communications are communications lines which connect the RIDT site to the

larger (off-base) GMD communications network. Embedded test capability refers to the equipment installed at the RIDT facility, which allows GMD to run tests and simulations, and gather flight test data for analysis. The Vandenberg AFB IDTs are designed to be relocatable, to provide the flexibility to remove, replace, and relocate the terminal quickly should the need arise.

An RIDT is normally unmanned, but may be manned during acceptance/flight testing, preventative maintenance, corrective maintenance, and upgrades. The two RIDTs would share the existing IDT Support Facility (ISFAC). Minor interior modifications to the ISFAC would be made to accommodate these needs. Once the site is operational, mowing and other vegetation maintenance would be continuous for security purposes.

Construction of the second RIDT would include installation of a Relocatable IDT and communications equipment, within shelters, on concrete pads; backup power generator and uninterruptable power supply; communications hut; storage facility for spares; an above ground water tank for fire suppression, with on-site distribution system; and installation of a septic system for the existing ISFAC.

The existing RIDT physical security facilities, including the fence, lighting, and sensors, would be extended to surround the proposed second RIDT. Communications lines would be extended from an existing power line along El Rancho Road, including a cross connection with the existing RIDT. The lines would be placed in a buried flexible conduit, to be installed via trenching. Commercial power would be brought to the second RIDT from an existing power line along the east side of El Rancho Road. The new line would be installed by a combination of boring and trenching. A new water line with pump station would be required to provide water sufficient for fire fighting. Trenching for the water line would be required and buried power lines would be extended to the new pump station from the second RIDT site.

In accordance with the Federal regulations for implementing NEPA, the SEA also analyzes the No Action Alternative, which serves as the baseline from which to compare the Proposed Action. Under the No Action Alternative, the MDA would not construct and operate the second RIDT.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES: To provide a context for understanding the potential effects of the Proposed Action and a basis for assessing the significance of potential impacts not already analyzed under the GMD IDOC EA, biological resources (specifically threatened and endangered species) and cultural resources were evaluated in this SEA. Each environmental resource was evaluated according to a list of activities that were determined to be necessary to accomplish the Proposed Action. The SEA did not further analyze other resource areas—including air quality, water resources, geology and soils, land use, infrastructure, socioeconomics, and environmental justice— because the potential effects on these resources would be the same as that described in the GMD IDOC EA since construction and operation of RIDT 2 is essentially the same as the first RIDT antenna and the proposed site is adjacent to the existing site. The GMD IDOC EA found no significant impact in these resource areas from the first RIDT. All activities would be conducted in compliance with applicable Federal, state, and local regulations and requirements. The following paragraphs summarize the potential effects on biological resources (threatened and endangered species) and cultural resources at Vandenberg AFB.

Biological Resources (Threatened and Endangered Species). Surveys of the project site at Vandenberg AFB have determined the presence of federally endangered Gaviota tarplant and potential suitable habitat for the endangered El Segundo blue butterfly (ESBB); those areas where coast buckwheat (the ESBB's host plant) occurs. On October 10, 2007, Vandenberg AFB received a Biological Opinion prepared by the US Fish and Wildlife Service (USFWS). The USFWS concluded in its Biological

Opinion that the Proposed Action would not jeopardize the continued existence of the Gaviota tarplant and ESBB, and that potential adverse impacts from construction activities and habitat loss would be minimized by implementing the mitigation measures described below.

- The Air Force and MDA would enhance suitable habitat for Gaviota tarplant and ESBB at a 1:1 ratio in a nearby area that is not likely to be designated for future development.

- The Air Force and MDA must use well-defined operational procedures, education programs, and qualified personnel to minimize the incidental take of ESBBs during implementation of the proposed project.

- The Air Force and MDA must ensure that the level of incidental take that occurs during project implementation is commensurate with the analysis in this SEA and Biological Opinion.

- Qualified biologists, familiar with ESBB, will provide a brief educational program for all personnel before any project activities occur within the action area. The Air Force must submit the credentials of individuals (to be provided by MDA) who will conduct these programs to the USFWS at least 15 days prior to the onset of these activities.

    - At a minimum, the educational program must include: 1) identification of the ESBB and its host plant, coast buckwheat; 2) the general provisions and protections afforded by the Act; and, 3) the measures to be implemented during the project to avoid and minimize adverse effects to the ESBB.

Cultural Resources. Since the proposed second RIDT site and associated areas where ground disturbance could occur are within already developed areas of the base, the proposed new construction activities should have no effect on historic properties. Consultation with the California State Historic Preservation Officer on the potential effects of the Proposed Action to cultural resources indicates that there are no adverse effects on historic properties and no mitigation measures required.

CONCLUSION: Based on analysis of the proposed construction and operation of a second RIDT at Vandenberg AFB, this SEA identified no significant impacts affecting the quality of the human environment. Preparation of an Environmental Impact Statement, therefore, is not required. A follow-up action list will be developed and completed by the Executing Agent to ensure compliance with the actions described in the attached SEA.

DEADLINE FOR RECEIPT OF WRITTEN COMMENTS: Fifteen days from the date of public notice.

POINT OF CONTACT: Submit written comments or requests for a copy of the Relocatable In-Flight Interceptor Communications System Data Terminal #2 at Vandenberg Air Force Base SEA to the address below. The SEA and draft Finding of No Significant are also available on the Internet at: http://www.mda.mil/mdalink/html/enviro.html.

U.S. Army Space and Missile Defense Command/Army Strategic Command
Attention: SMDC-EN-V (David Hasley)
Post Office Box 1500
Huntsville, AL 35807-3801

FINDING OF NO SIGNIFICANT IMPACT
for
RELOCATABLE IN-FLIGHT INTERCEPTOR COMMUNICATIONS SYSTEM DATA TERMINAL #2 AT VANDENBERG AIR FORCE BASE
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

AGENCY: United States Air Force (USAF)

CONCUR:

21 Dec 07

MICHAEL E. FORTNEY
Colonel, USAF
Vice Commander, 30th Space Wing
Chairman, Environmental, Safety, and Occupational Health Council
Vandenberg AFB, CA

Date

FINDING OF NO SIGNIFICANT IMPACT
for
RELOCATABLE IN-FLIGHT INTERCEPTOR COMMUNICATIONS SYSTEM DATA TERMINAL #2 AT VANDENBERG AIR FORCE BASE
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

AGENCY: United States Air Force (USAF)

APPROVED:

27 Dec 07

RICHARD E. WEBBER
Major General, USAF
Director of Installations and Mission Support

Date

FINDING OF NO SIGNIFICANT IMPACT
for
RELOCATABLE IN-FLIGHT INTERCEPTOR COMMUNICATIONS SYSTEM DATA TERMINAL #2 AT VANDENBERG AIR FORCE BASE
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

AGENCY: Missile Defense Agency (MDA)

APPROVED:

12/31/07

D. M. ALTWEGG
Deputy for Agency Operations, MDA

Date

This page intentionally left blank.

TABLE OF CONTENTS

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
BMDS	Ballistic Missile Defense System
CFR	Code of Federal Regulations
DOD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESBB	El Segundo Blue Butterfly
ETR	Extended Test Range
FONSI	Finding of No Significant Impact
Ft	Feet
GBI	Ground-Based Interceptor
GFC	GMD Fire Control
GMD	Ground-Based Midcourse Defense
IDOC	Initial Defensive Operations Capability
IDT	In-Flight Interceptor Communications System Data Terminal
IRP	Installation Restoration Program
ISFAC	IDT Support Facility
kW	Kilowatt
MDA	Missile Defense Agency
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
RIDT	Relocatable In-Flight Interceptor Communications System Data Terminal
ROI	Region of Influence
RSEES	Relocatable Shielded Electronic Equipment Shelter
RRS	Relocatable Radome Shelter
SEA	Supplemental EA
SHPO	State Historic Preservation Officer
US	United States
USFWS	US Fish and Wildlife Service

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 BACKGROUND

The Missile Defense Agency (MDA) is responsible for developing the Ballistic Missile Defense System (BMDS). Ground-Based Midcourse Defense (GMD) is a BMDS element, designed to intercept long-range ballistic missiles before their reentry into the Earth's atmosphere. In 2002, the President directed the Department of Defense (DOD) to field a set of initial missile defense capabilities (National Security Presidential Directive) beginning in 2004. In support of this directive, MDA/GMD established operational Ground-Based Interceptor (GBI) launch facilities at Vandenberg Air Force Base (AFB), California (CA), as part of an initial defense of the United States from a limited ballistic missile attack. This included a Relocatable In-Flight Interceptor Communications System Data Terminal (RIDT), which was constructed on North Vandenberg AFB in 2005. The RIDT provides a communications link between the GMD Fire Control (GFC) elements of the GMD system and the GBI during system testing and during an actual missile attack against the United States, its friends, or allies. These activities were previously analyzed in the *GMD Extended Test Range Final Environmental Impact Statement* (ETR EIS) (MDA, 2003a), and in the *GMD Initial Defensive Operations Capability at Vandenberg Air Force Base Environmental Assessment* (IDOC EA), (MDA, 2003b).

As a result of continuing development of BMDS components, MDA proposes construction of a second RIDT at Vandenberg AFB. This Supplemental Environmental Assessment (SEA) supplements the IDOC EA by analyzing the potential environmental impacts that might result from the construction and operation of the second RIDT.

1.2 PURPOSE AND NEED

The purpose of GMD is the defense of the United States and its allies against the threat of a limited strategic ballistic missile attack. MDA/GMD proposes construction of a second RIDT at Vandenberg AFB at a site adjacent to the existing RIDT to support the capability to launch defensive GBI missiles from Vandenberg AFB.

The second RIDT is needed to augment the capability to launch defensive GBI missiles from Vandenberg AFB to counter this threat.

1.3 SUPPORTING ENVIRONMENTAL ANALYSIS AND CONSULTATIONS

A biological assessment has been performed, and consultation with U.S. Fish and Wildlife Service (USFWS) was completed on October 5, 2007. MDA has worked with Vandenberg AFB Environmental Office (30 CES/CEV) archaeologists to design the site for minimum impact to cultural resources, and consultation with the California State Historic Preservation Officer (SHPO) was completed on 29 May 2007. MDA plans to submit a Notice of Intent to the State Water Resources Control Board for the National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit for this project. Contractors would be required to prepare and comply with Storm Water Pollution Prevention Plans, as described in the IDOC EA. MDA will obtain air permits from the Santa Barbara County Air Pollution Control District for the emergency generator.

The proposed second RIDT would be similar to and located adjacent to the existing RIDT, which was previously analyzed in the ETR EIS and IDOC EA in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and its implementing regulations, 42 United States Code 4321 *et seq.*

and 40 Code of Federal Regulations (CFR) 1500-1508, respectively; 32 CFR Part 651, *Environmental Analysis of Army Actions;* and Air Force Instruction 32-7061, *Environmental Impact Analysis Process*.

A detailed analysis of the RIDT was part of the ETR EIS. The IDOC EA described and summarized the environmental effects of the construction and operation of the RIDT at Vandenberg AFB. This SEA for the second RIDT supplements the analysis in the IDOC EA. The IDOC EA can be found in the following libraries and is also available on the Internet at: http://www.mda.mil/mdalink/html/enviro.html.

- Lompoc Public Library, Lompoc, CA
- Davidson Library, University of California, Santa Barbara, CA
- Santa Barbara Public Library, Santa Barbara, CA
- Santa Maria Public Library, Santa Maria, CA

1.4 PUBLIC NOTIFICATION AND REVIEW

In accordance with the Council on Environmental Quality, DOD, United States (US) Army, and US Air Force regulations for implementing NEPA, the MDA is soliciting comments on this EA and the enclosed Draft Finding of No Significant Impact (FONSI) from interested and affected parties.

Copies of the SEA and Draft FONSI have been placed in local libraries, in addition to being available over the Internet at http://www.mda.mil/mdalink/html/enviro.html. A listing of those agencies, organizations, and libraries that were sent a copy of the EA/Draft FONSI is provided in Chapter 8.

Following the 15-day public review period (as specified in the newspaper notices), the MDA will consider those public and agency comments received in deciding whether to (1) sign the FONSI, which would allow the Proposed Action to proceed, or (2) conduct additional environmental analysis (if needed).

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Two actions are analyzed in this EA—the Proposed Action and the No Action Alternative. Within this chapter, Section 2.1 provides a description of the Proposed Action, including construction and operation of a new RIDT. Section 2.2 provides a description of the No Action Alternative. Alternatives to the Proposed Action that were considered and eliminated from further study are discussed in Section 2.3.

2.1 PROPOSED ACTION

The proposed action is to construct and operate a second RIDT at a site adjacent to the existing RIDT along El Rancho Road on Vandenberg AFB (see Figure 2-1). This would be an operational facility with test capability.

2.1.1 Construction-Related Activities

Construction-related activities for the second RIDT are listed below and shown on Figure 2-2:

- Installation of a shelter on a 45 foot by 100 foot concrete pad;
- Extension of commercial power from an existing power line along El Rancho Road
- Back-up generator with storage tank and an uninterruptible power supply;
- A 6 foot by 6 foot drain;
- Extension and installation of physical security, to include security barriers, fences, lighting, and a 50-foot clear zone;
- Underground fiber optic cable communication connection to the site;
- A hut on a 12 foot by 22 foot pad;
- A storage facility on a 27 foot by 42 foot pad;
- Extension of utilities 1,038 linear feet from the existing RIDT, and from an existing node along El Rancho Road. The utilities would be installed via trenching;
- 200,000 gallon aboveground water tank for fire suppression on a 25-foot diameter pad, with on-site distribution system; and
- Installation of a septic system consisting of a 40 foot by 100 foot leach field, septic tank, and infiltration trenches for the for the existing In-Flight Interceptor Communications System Data Terminal (IDT) Support Facility (ISFAC) (the RIDTs do not produce sanitary wastewater).

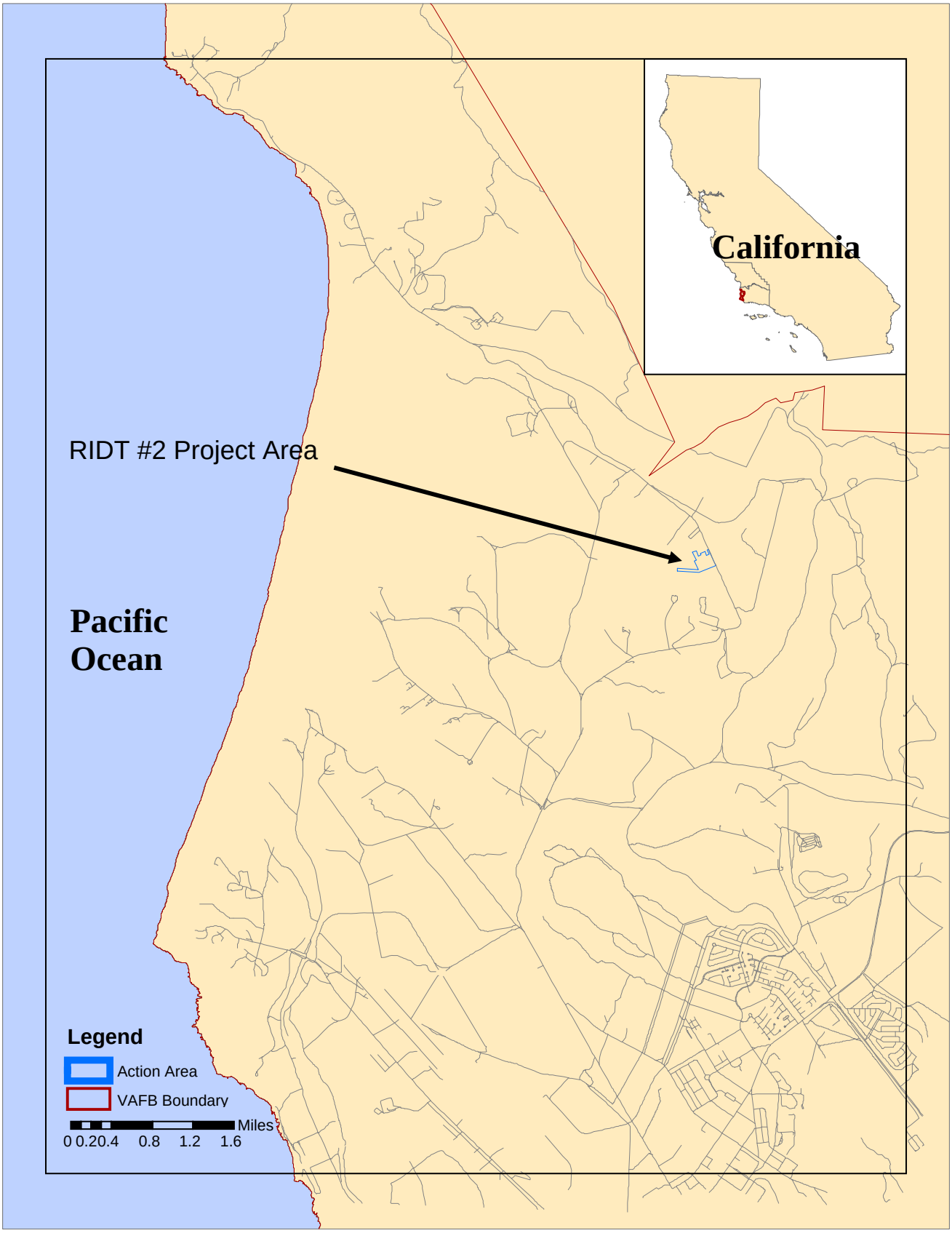

Figure 2-1 Project Location

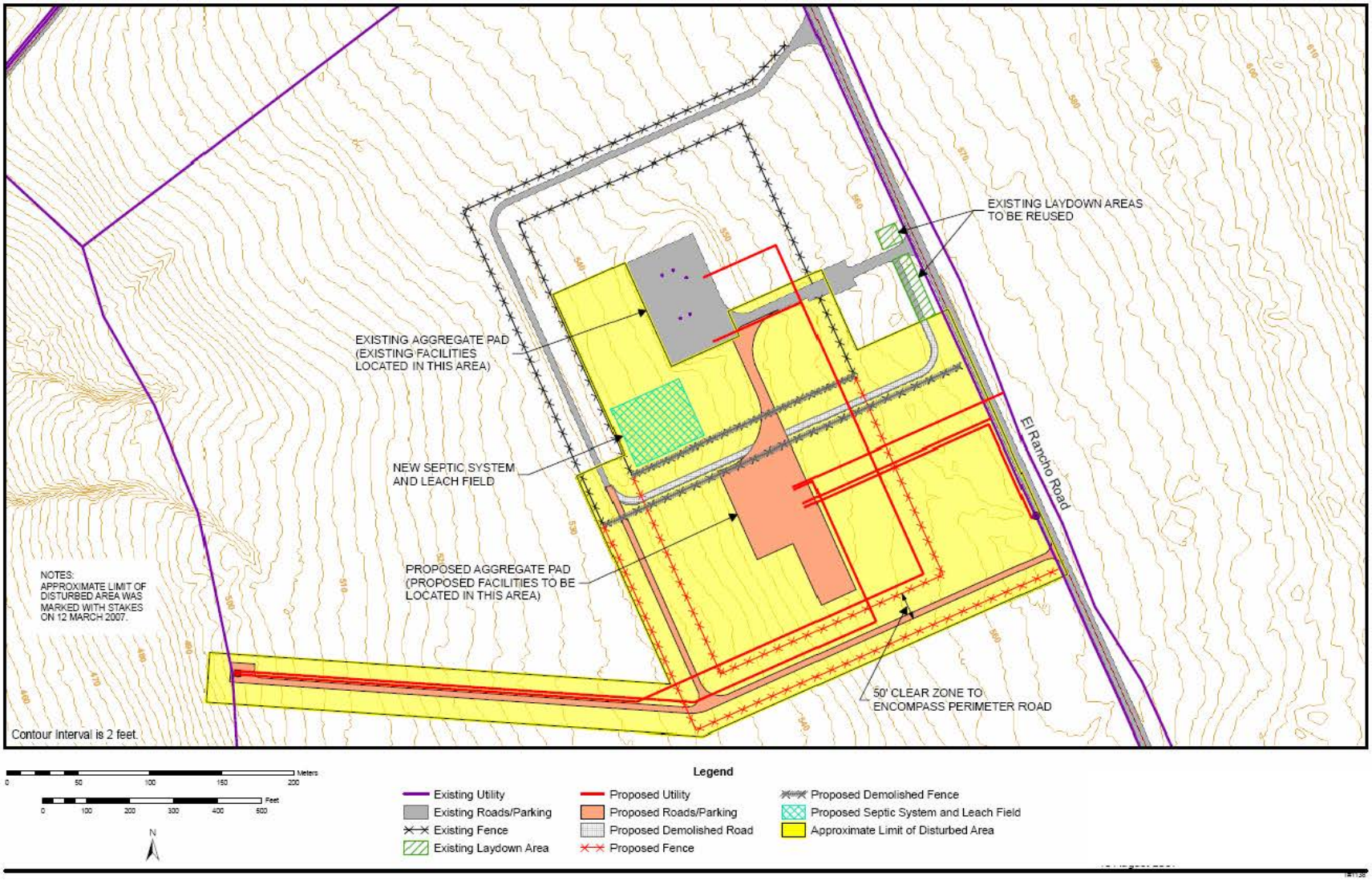

Figure 2-2 RIDT #2 Proposed Site Modifications

This page intentionally left blank.

2.1.1.1 Site Work

The site would require clearing and grubbing of existing vegetation within the proposed security fence line, which includes a 50-foot security clear zone (controlled vegetation) outside the new fence. The proposed RIDT would be built on several concrete pads designed to withstand local seismic events. The proposed RIDT site interior area would be aggregate-surfaced. Following construction, disturbed areas not under aggregate would be re-vegetated. The proposed RIDT would share the existing IDT support facilities, security entrance, and parking area with the existing RIDT.

2.1.1.2 Physical Security

The existing RIDT physical security facilities, including the fence, lighting, and sensors, would be extended to surround the proposed second RIDT. The existing facility fence would be extended 410 feet (ft) to the southwest in order to surround the proposed facility, for a total of 1,551 linear feet. A 50-foot clear zone outside of the fence line would include a perimeter road. This zone would be maintained by regular mowing and vegetation cutting to height of less than 4 inches;

2.1.1.3 Utilities (Power, Communications, and Water)

Commercial power would be provided via a buried line, brought to the proposed RIDT from an existing power line along El Rancho Road. The utilities would be extended by burying 3,377 linear feet of conduit. MDA would use a boring machine under El Rancho Road; then, use a small trenching machine up to a 3 ft by 3.33 ft pad;

Communications lines would be extended from the existing RIDT and from an existing manhole on the west side of El Rancho Road (see Figure 2-2). The lines would be placed in a buried flexible conduit, to be installed via trenching.

A new water line with pump station would be required to provide water sufficient for fire fighting. The water lines would be extended 3,515 ft to the site including a booster pump in a 12 ft by 22 ft shelter. MDA would excavate a trench for the water lines approximately 2-3 ft wide and 3-4 ft deep. A buried power line would be extended to the new pump station from the second RIDT site.

The backup generator is anticipated to be a greater than 50 horsepower diesel-fuel generator, with an integral diesel fuel storage tank. The fuel storage tank would have secondary spill containment. The generator would be tested for approximately one hour each month. A Santa Barbara County Air Pollution Control District Authority to Construct for this generator would be obtained prior to procurement and installation.

2.1.1.4 Schedule

Site work for the second RIDT could begin as early as December 2007 and would continue until April 2008. Equipment installation for the second RIDT could begin in May 2008 and continue until July 2008. The second RIDT is proposed to be operational by September 2008.

2.1.2 Operation of the RIDT

An IDT is a Super High Frequency 20/20 gigahertz radio transmitter and receiver that provides communications between the GFC Components and the GBI. The only time the IDT emits is when a GBI has been launched for flight-testing or in defense operations, or during calibration. Flight test frequency is discussed in the ETR EIS. Calibration may occur approximately twice per year. Exposure distance for

personnel is 300 ft. Exposure distance for aircraft is 700 ft. No safety or airspace concerns are anticipated. An RIDT is made up by the integration of the compound, facilities, antenna, communications node equipment, long haul communications, and embedded test capability. "Long haul communications" refers to the communications lines, which connect the RIDT site to the larger (off-base) GMD communications network. "Embedded test capability" refers to the equipment installed at the RIDT facility which allows GMD to run tests and simulations, and gather flight test data for analysis. The Vandenberg AFB IDTs are designed to be relocatable, to provide the flexibility to remove, replace, and relocate the terminal quickly should the need arise.

An RIDT is normally unmanned, but may be manned during acceptance/flight testing, preventative maintenance, corrective maintenance, and upgrades.

The two RIDTs would share the existing ISFAC. Minor interior modifications to the ISFAC would be made to accommodate these needs.

Once the site is operational, mowing and other vegetation maintenance would be continuous for security purposes.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the MDA would not construct and operate the second RIDT.

2.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Sites remote from the existing RIDT were not considered due to the increased length of utility runs required, and need for separate support facilities and services. Placing the second RIDT near the first RIDT allows for sharing of the ISFAC and other support services; allows for consolidated maintenance, operations, and supplies storage; and decreases the total area of land disturbance for site work and utility installation.

3.0 AFFECTED ENVIRONMENT

This chapter describes the environmental characteristics that may be affected by the Proposed Action. The activities associated with the second RIDT site could have an effect on biological resources (specifically threatened and endangered species) and on cultural resources at Vandenberg AFB. These resource areas are summarized in the sections below.

Impacts to other environmental resources at Vandenberg AFB would be similar to those discussed in the IDOC EA (MDA, 2003b). These resources are summarized in the following paragraphs and are not analyzed further in this SEA because the impact results would be the same as that identified in the IDOC EA for the first RIDT

Air Quality

The Proposed Action is not anticipated to impact the regional air quality. Emissions from site preparation activities would be regulated in accordance with the Memorandum of Agreement between Vandenberg AFB and the Santa Barbara County Air Pollution Control District. No exceedance of air quality standards or health-based standards of non-criteria pollutants would be anticipated during site preparation activities.

Airspace

The activities proposed would not result in short- or long-term impacts to airspace. No new special use airspace, or any modification to existing special use airspace, would be required to support the Proposed Action.

Environmental Justice

No environmental justice issues have been identified at Vandenberg AFB.

Geology and Soils

A Stormwater Pollution Prevention Plan would be developed for the site in coordination with 30 SW to satisfy the requirements of the National Pollutant Discharge Elimination System. Best Management Practices (BMPs) would be used for erosion and sediment control. The Vandenberg AFB *Spill Prevention Control and Countermeasure Plan* (30 SW Plan 32- 4002C) would provide resources and guidelines for use in the control, cleanup, and emergency response for spills of hazardous material or waste. The Plan also would provide measures to prevent soil erosion. In the event that the release of hazardous material or waste would occur, affected areas would be treated in accordance with applicable federal, state, and local regulations.

Hazardous Materials and Hazardous Waste

Hazardous materials use at Vandenberg AFB must conform to applicable federal, state and local laws and regulations. Hazardous materials obtained from off base suppliers would be coordinated through Vandenberg AFB's Hazmart Pharmacy. Hazardous materials are tracked using Environmental Management System software. These procedures are in accordance with the 30 SW Hazardous Materials Management Plan, which describes procedures for packaging, handling, transporting, and disposing of hazardous waste. In the unlikely event that a spill or release occurs, the use of procedures outlined in the Vandenberg AFB *Spill Prevention Control and Countermeasures Plan* (30 SW Plan 32-4002C) and *Hazardous Materials Emergency Response Plan* (30 SW Plan 32-4002A) should ensure that the potential impact would be minimal.

Health and Safety

Site preparation activities, would comply with OSHA, U.S. Air Force safety and health regulations, the U.S. Army Corps of Engineers *Safety and Health Requirements Manual (EM 385-1-1)*, Range Safety requirements and other recognized standards for operations that involve construction or facility modifications as applicable. Associated radiofrequency emissions from the IDT are considered to be of sufficiently low power that there would be no exposure hazard. Security measures, such as fencing, would prohibit public access to the IDT site and keep the area free from any equipment that could cause electronic interference with the IDT receiving band.

Infrastructure

U.S. Air Force approval for work at the project sites would be requested and received prior to any building modification or road excavation. These permits require the notification and approval of the Utilities Shop, the Communication Squadron, and the Explosive Ordnance Disposal Flight to avoid impacting existing utilities, telephone cables, and fiber optic lines, or unexpected encounters with Explosive Ordnance Disposal. The Electrical Division would be consulted for the identification and location flagging of underground electric lines on site.

Transportation procedures would comply with FAA, DOT, OSHA, and applicable U.S. Air Force safety regulations. These procedures would minimize the potential for accidents, as well as provide the means of mitigating potential adverse effects should an accident occur. These limited events would not have any substantial impact on existing transportation patterns or volume on or off base. Site preparation and operational activities, would have no long-term adverse impact on transportation on Vandenberg AFB and would have no impact to off base transportation.

The Civil Engineering Utilities Shop would be contacted for guidance on septic system issues. Wastewaters that result from rainfall episodes, pad/equipment washdowns, hazardous chemical spills, or other wastewater producing processes would be anticipated, captured and contained for waste disposition.

Land Use

The California Coastal Commission approved the Federal Consistency Determination, which included the existing RIDT, at their meeting of 6 August 2003. However, according to the Vandenberg AFB General Plan (Vandenberg AFB, 2005), the proposed second RIDT is outside of the designated coastal zone and no further analysis or approval is required.

Noise

Noise from site preparation, would comply with the Occupational Safety and Health Act, the U.S. Air Force Occupational Safety and Health regulations, the U.S. Army Corps of Engineers *Safety and Health Requirements Manual (EM 385-1-1)*, Range Safety requirements, and other recognized standards for operations that involve construction or facility modifications. Restricted public access to the proposed project site would be ensured through use of signs and fencing. Additionally, the proposed sites are well within the boundaries of Vandenberg AFB, which eliminates any concerns about noise exposure to the local public outside the base. A health and safety plan, requiring the use of hearing protection when appropriate, would be prepared by the contractor and submitted to the base to ensure the health and safety of onsite workers.

Socioeconomics

Site preparation activities would not cause any displacement of populations, residences, or businesses within Santa Barbara County. By spending money in the local economy, mainly via accommodation and procurement of goods and services, the additional personnel would represent both a potential increase in local service-based employment opportunities and a small but positive temporary economic impact to the

local community. The overall impact would however be slight and would not cause any population growth.

Water Resources

Site preparation and operational activities would follow spill prevention, containment, and control measures and thus would minimize any potential impacts to surface water.

Because the cumulative area disturbed by the Proposed Action would be greater than 0.4 hectare (1 acre), a National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity would apply. The program would submit a Notice of Intent to comply with this State General Permit for construction activities to the Regional Water Quality Control Board. A Stormwater Pollution Prevention Plan would be developed by the program in coordination with 30 SW and submitted for review to 30 CES/CEVC to satisfy the requirements of the National Pollutant Discharge Elimination System. During site preparation and construction activities, stormwater BMPs (erosion inhibiting) would be implemented during and after construction and grading. Long term BMPs would be installed to offset stormwater pollution during the operating phase

3.1 THREATENED AND ENDANGERED SPECIES

Surveys of the project site in May 2007 and a review of previous surveys conducted in the area , within and adjacent to the proposed second RIDT site, determined the presence of federally endangered Gaviota tarplant and potential suitable habitat for the endangered El Segundo blue butterfly (ESBB). No additional federally listed or special status species were detected within the area during biological surveys in May 2007 or in prior years (Vandenberg AFB, 2007b).

Gaviota tarplant

The Gaviota tarplant (*Deinandra increscens villosa*), a member of the aster family, is a yellow-flowered, gray-green, soft hairy annual that is three to nine decimeters (12 to 35 inches) tall with stems branching near the base. Gaviota tarplant was listed as federally endangered on March 20, 2000 (65 Federal Register [FR] 14888-14898). Gaviota tarplant was formerly known only from coastal terraces in the Gaviota area. However, over the last few years, seven new locations have been observed, as well as many populations on Vandenberg AFB. This plant is most often associated with grasslands, and clearings in Burton Mesa Chaparral and Central Coast Scrub.

The USFWS designated critical habitat for Gaviota tarplant on November 7, 2002. However, Vandenberg AFB was excluded from this designation under section 4(b)(2) of the Endangered Species Act. As a result, the proposed project is not considered critical habitat.

A total of 277 individual tarplants, covering 0.06 acres, were found within the project site during the May 2007 survey. During May, tarplant are not at a stage (flowering) that permit the definitive differentiation of the federally endangered Gaviota tarplant from the common subspecies (*Deinandra increscens increscens*) based on morphological features. The tarplant found within the area during this survey were primarily large vegetative plants approaching flowering. Some smaller plants and seedlings were also present. Due to the small size and cryptic nature of small vegetative plants, some plants within the action area may not have been detected.

The entire 20.3-acre project site overlaps potentially suitable habitat for Gaviota tarplant. An area of 5.92 acres is currently mowed non-native grassland that was found to support 277 tarplants during the May 2007 survey. This area is in the current security clear zone for the facility and experiences continuous

mowing. An area of 14.0 acres is non-native grassland that is periodically grazed by cattle throughout the year. No tarplant were found in this habitat during the May 2007 surveys. The remaining 0.34 acres of the area is roadside ruderal habitat that experiences continuous mowing. No tarplant were found in this habitat during the May 2007 survey.

In 2006, 8794.2 acres of Vandenberg AFB were surveyed and 568.4 acres of tarplant were mapped, including those within a portion of the existing RIDT facility. Of the tarplant mapped, 285.2 acres supported tarplant exhibiting characteristics consistent with Gaviota tarplant. Vandenberg AFB will continue to update its inventory of populations of Gaviota tarplant by conducting additional surveys based on habitats and soils where existing populations are located. Surveys will be conducted over several growing seasons to assess the extent of each population and to identify the climatic conditions (low/high precipitation) that most favor this species.

The existing RIDT facility was surveyed for tarplant in October 2005. Tarplant found during the 2005 survey were morphologically consistent with the Gaviota tarplant. The numbers of plants were not recorded in 2005. However, tarplant stands were much more extensive, covering 1.12 acres within the existing RIDT site, likely due to higher rainfall at Vandenberg AFB during 2005. The proposed project site extends onto pasture that was not surveyed for tarplant in 2005.

Also in 2005, additional tarplant surveys were conducted on 144.3 acres of Titan Pasture for the Installation Restoration Program (IRP). This site is approximately 0.62 miles to the northwest of the project site. Based on the results of this survey, it was estimated that the 144-acre area surveyed had 162,911 tarplants per acre. The area surveyed is within non-native grassland habitat contiguous to the area of the proposed project site, although important aspects such as hydrology and soil characteristics may differ since the second RIDT site is approximately 3,280 ft upslope from the IRP surveyed site (Vandenberg AFB, 2007b).

El Segundo Blue Butterfly

The El Segundo blue butterfly (*Euphilotes battoides allyni*), a member of the Lycaenid family, has blue upperwings and boldly spotted lower wings, checkered wing margins and a bold orange aurora. It ranges in size from 17 to 21 millimeters. It was federally proposed for special status listing on October 4, 1975 (40 FR 41839-48140) and determined to be a federally endangered on June 1, 1976 (40 FR 22041-22044) Although ESBBs have not been confirmed north of Los Angeles County, biologists reported in 2005 to have identified individual butterflies at Vandenberg AFB. However, it is not completely clear if the butterflies observed were actually the ESBB or morphologically similar species. Because of similarities in their wing morphology, flight period, and host plant association, the USFWS is considering the reported individuals to be the ESBB until receiving more information stating otherwise (USFWS, 2007).

The exact range and distribution of the ESBB on Vandenberg AFB is not known. This species was documented on Vandenberg AFB at three locations: Tranquillion Peak along north Spur Road, near San Antonio Creek and the railroad overpass, and near south Spur road west of the Taurus launch facility. The species was found in coastal back dune habitats and central coast scrub. However, with the exception of Tranquillion Peak, it was absent from inland areas surveyed (i.e., Oak Mountain and Barka Slough) where its host plant, coast buckwheat (*Eriogonum parvifolium),* was present. Vandenberg will continue to update its inventory of populations by conducting surveys over several flight seasons. Surveys will be conducted to assess extent of populations and identify habitat characteristics that most favor this species.

The USFWS designated critical habitat for the ESBB on February 8, 1977. However, ESBBs were not known to occur on Vandenberg AFB at that time and would likely be excluded from this designation

under Section 4(b) (2) of the Endangered Species Act. As a result, the proposed project is not in critical habitat.

The May 2007 site survey was outside of the mid-June to August adult flight period when ESBBs may be active. The area has not been surveyed for ESBBs during the flight season. The nearest documented occurrence of ESBBs on Vandenberg AFB is 3.1 miles west of the RIDT site. The potential for ESBBs to occur in the project site is based on the occurrence of their host plant, coast buckwheat (*Eriogonum parvifolium*).

During the May 2007 survey, 103 coast buckwheat plants were found within the project site covering 0.28 acres. Loose sandy soil, similar to soils associated with typical ESBB habitat, is present. The seacliff buckwheat habitat located within the area is likely to be suitable habitat for ESBBs, although the area has not been surveyed for this species (Vandenberg AFB, 2007b).

3.2 CULTURAL RESOURCES

Cultural resources include prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. Cultural resources are limited, nonrenewable resources whose potential for scientific research (or value as a traditional resource) may be easily diminished by actions impacting their integrity.

The ROI [1] for cultural resources includes the proposed second RIDT site and any other areas where ground disturbance could occur (e.g., utility lines, communication lines, and installation of a septic system).

The Air Force has determined and documented the ROI in accordance with 36 CFR 800,4(a)(l). Surveys determined that there are no historic properties within the second RIDT project area (Vandenberg AFB, 2007a).

[1] The term ROI is synomynous with the “area of potential effect” as defined under cultural resource regulations, 36 CFR 800.16(d).

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental consequences of the Proposed Action described in Chapter 2 by comparing it with the affected environmental resources described in Chapter 3. A list of all agencies and organizations consulted as part of this analysis is provided in Chapter 6.

4.1 BIOLOGICAL RESOURCES (THREATENED AND ENDANGERED SPECIES)

Gaviota tarplant and El Segundo Blue Butterfly

Constructing the second RIDT and the associated support facilities would adversely affect Gaviota tarplant habitat and individual plants. Constructing the buildings; installing concrete pads and the security fence; water, communication, and power lines; and a septic system would result in the permanent loss of Gaviota tarplant habitat and any individuals in those areas. In addition, maintaining the 50-foot security clear zone through routine maintenance could also adversely affect Gaviota tarplant because the MDA proposed to maintain the vegetation within this zone at a height of 4 inches or less. Thus, Gaviota tarplant individuals could be killed or flowering precluded if the maintenance activities occur during the germinating and blooming seasons. However, if the maintenance activities occur after Gaviota tarplants have reached maturity, individuals would not be killed or precluded from flowering. A vast majority of the action area that is not converted to concrete, buildings, or roads would be subject to routine mowing. Furthermore, Gaviota tarplant seeds could be crushed and soil hydrology may be altered because of compaction of the soils due to the various project activities.

Gaviota tarplant may benefit from the proposed project because this species responds positively to some form of soil disturbance as it increases seed coat permeability through abrasion and this may enhance germinability. However, substantial soil disturbance may also stimulate the growth of competitive exotic plant species. Additionally, disturbance when the soil is wet is likely to kill Gaviota tarplant seeds as well as young seedlings.

Constructing the second RIDT with the support facilities could adversely affect ESBB individuals and habitat. Coast buckwheat plants are lightly scattered throughout the un-mowed non-native grassland. Most of this area would be converted to either mowed nonnative grassland or to concrete surfaces, buildings, and/or roads. If coast buckwheat plants exist where concrete structures and roads are proposed, the individual plants and habitat would be permanently lost. If coast buckwheat plants occur within an area proposed for routine maintenance activities, individual plants would be kept to a height of 4 inches or less, which could affect the plant's ability to flower and reproduce. These inabilities would result in a loss of ESBB habitat because the butterfly solely depends upon coast buckwheat plants to support all of its life stages. Moreover, the ESBB could be injured or killed by moving vehicles and equipment. Adult ESBBs could disperse to nearby suitable habitat, if present, to avoid adverse effects from the proposed project. However, ESBBs have relatively limited dispersal capability; distances of greater than 656 feet are rare (USFWS, 2007).

In summary, constructing the second RIDT would permanently remove approximately 2.3 acres of Gaviota tarplant habitat due to the conversion of grassland to concrete surfaces, buildings, and roads. The 0.73 acre of occupied Gaviota tarplant habitat that occurs within the action area could either be part of the 2.3 acres of habitat permanently removed or subject to routine mowing. In addition, the proposed project could result in the permanent loss of 0.28 acre of ESBB habitat due to the installation of the second RIDT facilities and land use changes within the action area. Because the project site contains an existing RIDT

with support facilities and these habitats have been historically mowed or subjected to cattle grazing, we assume the Gaviota tarplant and coast buckwheat occurs in disturbed, lower quality habitat. Coast buckwheat plants represent potential habitat for ESBBs and this habitat may be occupied. However, the action area has never been surveyed during the active phase when ESBBs are observable. Therefore, the proposed project could result in a permanent loss of ESBB individuals.

Mitigating Measures

On October 10, 2007, Vandenberg AFB received a Biological Opinion prepared by the USFWS Ventura Fish and Wildlife Office (see Appendix A). The USFWS concluded in its Biological Opinion that the Proposed Action would not jeopardize the continued existence of the Gaviota tarplant and ESBB, and that the potential adverse impacts from construction activities and habitat loss would be minimized by implementing the mitigation measures described below.

- The Air Force and MDA would enhance suitable habitat for Gaviota tarplant and ESBB at a 1:1 ratio in a nearby area that is not likely to be designated for future development.

- The Air Force must use well-defined operational procedures, education programs, and qualified personnel to minimize the incidental take of ESBB during implementation of the proposed project.

- The Air Force must ensure that the level of incidental take that occurs during project implementation is commensurate with the analysis in this SEA.

- Qualified biologists, familiar with ESBB, will provide a brief educational program for all personnel before any project activities occur within the action area. The Air Force must submit the credentials of individuals who will conduct these programs to the USFWS at least 15 days prior to the onset of these activities.

- At a minimum, the educational program must include: 1) identification of the ESBB and its host plant, coast buckwheat; 2) the general provisions and protections afforded by the Endangered Species Act; and, 3) the measures to be implemented during the project to avoid and minimize adverse effects to ESBB.

The USFWS assumed that the average coast buckwheat contains about 300 flowerheads and may produce 30 ESBB adults. However, the population at Vandenberg AFB occurs in much lower densities than other known populations. Generally, ESBBs are not common anywhere they are observed. Thus, the USFWS assumed that the average coast buckwheat within the action area could provide habitat for up to a maximum of 3 ESBB adults.

If more than three ESBBs are found dead or injured, the population in the action area is presumed to be greater than expected and the project activities would have resulted in a greater adverse effect than analyzed. Consequently, the Air Force would need to contact the USFWS immediately so that the USFWS can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by the Air Force and the MDA and the terms and conditions of the biological opinion have been, and continue to be, implemented.

Through consultations with the USFWS and the implementation of mitigation measures identified above, no significant cumulative impacts on Gaviota tarplant or ESBB are expected at Vandenberg AFB.

4.2 CULTURAL RESOURCES

No direct, indirect, or cumulative impacts to cultural resources would be expected as a result of implementing the Proposed Action. In a letter dated May 29, 2007, the California SHPO concurred that a Finding of No Adverse Effects to historic properties is appropriate, per 36 CFR §800.5(b) (see Appendix B). There were no mitigation measures for cultural resources required by the California SHPO.

4.3 ENVIRONMENTAL EFFECTS OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the construction and operation of the second RIDT would not occur. MDA/GMD would not be able to augment the capability to launch defensive GBI missiles from Vandenberg AFB to counter the threat of a limited strategic ballistic missile attack.

As a result, potential impacts from proposed construction, and long-term operations and maintenance activities, would not occur. Vandenberg AFB would continue ongoing operations, with environmental conditions expected to remain unchanged from that described for the Affected Environment in Chapter 3 of the SEA.

5.0 LIST OF REFERENCES

Missile Defense Agency (MDA), 2003a. *Ground-Based Midcourse Defense Extended Test Range Final Environmental Impact Statement*, July.

Missile Defense Agency (MDA), 2003b. *Ground-Based Midcourse Defense Initial Defensive Operations Capability at Vandenberg Air Force Base Environmental Assessment*, August.

Northrop Grumman Corporation and Harris Corporation, 2006. *Vandenberg Air Force Base RIDT-2 Site Survey Trip Report*, August.

US Fish and Wildlife Service (USFWS), 2007. *Biological Opinion for the Second Relocatable In-Flight Interceptor Communications System Data Terminal Project, Vandenberg Air Force Base, Santa Barbara County, California (1-8-07-F-56).* October 5.

Vandenberg Air Force Base, 2007a. Section 106 Consultation Letter to California Office of Historic Preservation. April 18.

Vandenberg Air Force Base, 2007b. *Biological Assessment, Gaviota Tarplant and El Segundo Blue Butterfly and Second Relocatable In-Flight Interceptor Communications System Data Terminal*, August. Prepared by ManTech SRS Technologies for the 30th Space Wing Environmental Flight (30 CES/CEV).

6.0 LIST OF AGENCIES AND ORGANIZATIONS CONTACTED

The following agencies and organizations were consulted or provided information during the preparation of the SEA:

California Office of Historic Preservation, Sacramento, CA

US Fish and Wildlife Service, Ventura Field Office, Ventura, CA

Vandenberg Air Force Base Environmental Office, 30 CES/CEV

7.0 LIST OF PREPARERS

Government

David Hasley, Environmental Engineer, U.S. Army Space and Missile Defense Command
BS, Mechanical Engineering, University of Texas, Arlington
Years of Experience: 19

Contractors

Ron Keglovits, Deputy Program Manager Environmental Engineering/Senior System Analyst II, Teledyne Solutions, Inc.
MA, Management, Webster College
BA, Business Management, St. Martin's College
Years of Experience: 22

Joseph B. Kriz, Senior Environmental Analyst, Teledyne Solutions, Inc.
BA, Geoenvironmental Studies, Shippensburg University
BS, Biology, Shippensburg University
Years of Experience: 23

Margaret Lindsey, Environmental Engineer, Teledyne Solutions, Inc.
BS, Engineering, University of Alabama Huntsville
BS, Biology, University of Alabama Huntsville
Years of Experience: 2.5

Rickie D. Moon, Senior Systems Engineer, Teledyne Solutions, Inc.
MS, Environmental Management, Samford University
BS, Chemistry and Mathematics, Samford University
Years of Experience: 23

8.0 DISTRIBUTION LIST

The following is a list of agencies, organizations, and libraries that were sent a copy of the SEA and Draft FONSI:

Federal Agencies

US Fish and Wildlife Service, Ventura Field Office, Ventura, CA
US Environmental Protection Agency, Region IX, San Francisco, CA

State and Local Agencies

California State Clearinghouse, Sacramento, CA
California Office of Historic Preservation, Sacramento, CA
Santa Barbara County Air Pollution Control District, Santa Barbara, CA
University of California, Santa Barbara, Dept. of Ecology, Evolution, and Marine Biology, Santa Barbara, CA

Native American Tribes

Santa Ynez Band of Chumash Indians, Tribal Elders Council, Santa Ynez, CA

Organizations

La Purisima Audubon Society, Lompoc, CA
Environmental Defense Center, Santa Barbara, CA
Sierra Club, Santa Barbara, CA
California Native Plant Society, Los Osos, CA

Libraries

Lompoc Public Library, Lompoc, CA
Davidson Library, University of California, Santa Barbara, CA
Santa Barbara Public Library, Santa Barbara, CA
Santa Maria Public Library, Santa Maria, CA

APPENDIX A

U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL OPINION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
PAS 1358.5282.7602

October 5, 2007

Beatrice L. Kephart
Chief, Environmental Flight
30 CES/CEV
1028 Iceland Avenue
Vandenberg Air Force Base, California 93437

Subject: Biological Opinion for the Second Relocatable In-Flight Interceptor Communications System Data Terminal Project, Vandenberg Air Force Base, Santa Barbara County, California (1-8-07-F-56)

Dear Ms. Kephart:

This document, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act)(16 U.S.C. 1531 et seq.), transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the effects of the U.S. Air Force's (Air Force) proposal to construct a second Relocatable In-flight Interceptor Communications System Data Terminal (RIDT) on the federally endangered El Segundo blue butterfly (*Euphilotes battoides allyni*) and Gaviota tarplant (*Deinandra increscens* ssp. *villosa*). We received your request for formal consultation in our office on August 14, 2007.

This biological opinion was prepared using information provided in your request for formal consultation, electronic and telephone communications between our staffs, and information in our files. A complete administrative record for this biological opinion is available at the Ventura Fish and Wildlife Office.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Missile Defense Agency (MDA) is responsible for developing a Ballistic Missile Defense System (BMDS). Ground-based Missile Defense (GMD) is a BMDS element, designed to intercept long range ballistic missiles before their reentry into the earth's atmosphere. In support of a Presidential directive, MDA and GMD established operational ground-based interceptor launch facilities at Vandenberg Air Force Base (VAFB). This included a RIDT that was previously constructed at the Titan Pasture along El Rancho Road. Development of the BMDS is a high priority of the Department of Defense.

RECEIVED
OCT 10 2007
By

MDA proposed to construct a second RIDT on VAFB at a site adjacent to the existing RIDT. The proposed RIDT would share the existing IDT support facilities, security entrance, and parking area with the existing RIDT. MDA would clear and grub the existing vegetation within the proposed security fence line and within a 50-foot security clear zone outside the fence line. The proposed RIDT would be built on several concrete foundations designed to withstand local seismic events. The site interior would be aggregate and following construction, MDA would revegetate the disturbed areas not under aggregate. The construction of this second RIDT would include the following components:

a. A shelter on a 45 foot by 100 foot concrete pad;

b. Extending utilities along El Rancho Road from the existing facility to the proposed facility by burying 3,377 linear feet (lf) of conduit. MDA would use a boring machine under El Rancho Road; then, use a small trenching machine up to a 3 foot by 3.33 foot pad;

c. A back-up generator with storage tank and an uninterruptible power supply;

d. A 6 foot by 6 foot drain;

e. Extending utilities 1,038 lf from the existing facility, and from an existing node along El Rancho Road. The utilities would be installed via trenching;

f. A hut on a 12 foot by 22 foot pad;

g. A storage facility on a 27 foot by 42 foot pad;

h. Extending the existing facility fence, 410 feet to the southwest in order to surround the proposed facility, for a total of 1551 linear feet. A 50-foot clear zone outside of the fence line would include a perimeter road. This zone would be maintained by regular mowing and vegetation cutting to a height of less than 4 inches;

i. Extending water lines 3,515 feet to the site including a booster pump in a 12 foot by 22 foot shelter. MDA would excavate a trench for the water lines approximately 2- to 3-feet wide and 3- to 4-feet deep. A buried power line would be extended to the new pump station from the proposed facility;

j. A 200,000 gallon above-ground water tank for fire suppression on a 25-foot diameter pad, with on-site distribution system; and

k. A septic system consisting of a 40 foot by 100 foot leach field, septic tank, and infiltration trenches for the IDT support facility.

The proposed project is scheduled to begin as early as November 2007 and would continue until April 2008. Equipment installation for the second RIDT could begin in May 2008 and would continue until July 2008. The MDA Director requires that the second RIDT be operational by September 2008.

As part of the project description, the Air Force and MDA proposed to implement the following measures to minimize effects to Gaviota tarplant and El Segundo blue butterfly:

- MDA will minimize the removal of native vegetation to the maximum extent possible;
- MDA will delineate vehicle access routes to and from the action area to minimize effects to Gaviota tarplant and El Segundo blue butterflies and its host plant, coast buckwheat (*Eriogonum parvifolium*);
- A qualified biologist familiar with Gaviota tarplant, El Segundo blue butterfly, and coast buckwheat will monitor project activities and flag areas that contain these species where avoidance is possible;
- Where avoidance is possible, MDA will maintain a 2-foot buffer around coast buckwheat plants to protect diapausing El Segundo blue butterfly pupae;
- Where avoidance is not possible, MDA will enhance suitable habitat for Gaviota tarplant and El Segundo blue butterflies at a 1:1 ratio in a nearby area that is not likely to be designated for future development. Enhancement activities include removal of invasive iceplant (*Carpobrotus* spp.) and/or pampas grass (*Cortaderia* spp.).

STATUS OF THE SPECIES

El Segundo blue butterfly

The El Segundo blue butterfly was listed as endangered on June 1, 1976 (41 FR 22041). Critical habitat for the species has not been designated. We published the Recovery Plan for the El Segundo blue butterfly on September 28, 1998 (Service 1998). The El Segundo blue butterfly was formally described by Oakley Shields (1975) based on specimens that had been collected in the City of El Segundo.

The El Segundo blue butterfly is in the family Lycaenidae. It is one of five subspecies comprising the polytypic species, the square-spotted blue butterfly *(Euphilotes battoides)*. These butterflies inhabit southern California, southern Nevada, Arizona, and northern Mexico. The El Segundo blue butterfly, however, is endemic to southwestern Los Angeles County in coastal southern California. The adults have a wingspan of 0.75 to 1.25 inches. The wings of the males are a brilliant blue color with an orange border on the rear of the upper hindwings. The females have dull brown colored wings with an orange border on the upper distal surface of the hindwings (Service 1998).

Like all species in the genus *Euphilotes*, the El Segundo blue butterfly spends its entire life cycle in intimate association with a species of buckwheat, in this case coast buckwheat. However, the almost total involvement of all life stages with a single plant is unique among North American butterflies. El Segundo blue butterfly adults mate, nectar, lay eggs, perch, and in most cases probably die on flower heads (Mattoni 1990).

The adult stage begins in early June and concludes in early to mid-September. The onset of this stage is closely synchronized with the beginning of the flowering season for coast buckwheat (Mattoni 1990). Typically, adult females survive up to 2 weeks whereas a male may survive up to 7 days (Pratt, pers. comm. 2006a). Upon emergence as adults, females fly to coast buckwheat flower heads where they mate with males that are constantly moving among flower heads (Service 1998). Eggs hatch within 3 to 5 days. The larvae then undergo four instars to complete growth, a process that takes 18 to 25 days (Service 1998). By the third instar, the larvae develop honey glands, and are thereafter usually tended by ants (e.g. *Iridiomyrmex humilis*, *Conomyrmex* spp.), which may protect them from parasitoids (Branchoid wasp (*Cortesia* spp.)) and small predators (Mattoni 1990). The larvae remain concealed within flower heads and initially feed on pollen, then switch to feeding on seeds sometime during the first and second instar (Pratt, pers. comm. 2006a). Larvae are highly polymorphic, varying from almost pure white or yellow to strikingly marked individuals with a dull red-to-maroon background broken by a series of yellow or white dashes (Mattoni 1990). By September, coast buckwheat plants have generally senesced and the larvae fall or crawl to the ground and diapause in the soil from September until they emerge as adults the following June. Some pupae may remain in diapause for 2 or more years (Service 1998). At least one-half inch of rain must get into the soil to get enough moisture for the pupae to undergo a life stage change (Pratt, pers. comm. 2006a).

Historically, the El Segundo blue butterfly likely inhabited much of the El Segundo Dunes. Museum records reveal that the El Segundo blue butterfly was once widespread on the El Segundo sand dunes and specimens were collected at El Segundo, Redondo Beach, Manhattan Beach, and at several locations on the Palos Verdes peninsula (Donahue 1975). There are known populations at four locations: the Ballona Wetlands, the Airport Dunes, the Chevron Preserve, and Malaga Cove. Four recovery units, based on geographic proximity, habitat similarity, and possible genetic exchange, encompass these areas with the known populations and/or areas with restorable habitat (Service 1998).

The precise habitat requirements of El Segundo blue butterflies are not fully understood. Since, El Segundo blue butterflies depend solely on coast buckwheat, their distribution is dependent upon the occurrence of coast buckwheat. The known range of coast buckwheat is greater than the range of the El Segundo blue butterfly; coast buckwheat extends from San Diego County to the northern end of Monterey County (Pratt, pers. comm. 2006b). However, El Segundo blue butterflies have not been confirmed north of the Ballona Wetlands in Los Angeles County (Mattoni 1990). Additionally, the El Segundo blue butterfly appears further limited to areas with high sand content (Service 1998).

In general, El Segundo blue butterfly is primarily impacted by competition with non-native vegetation, other insects utilizing coast buckwheat, and habitat fragmentation. Relatively fast-growing exotics such as acacia (*Acacia* spp.), iceplant (*Carprobrotus* spp.), other *Eriogonum* species, and non-native grasses compete with coast buckwheat by inhibiting seedling from sprouting and maturation of juveniles (Mattoni 1990). Habitat fragmentation produces edge effects that facilitate the introduction of invasive, non-native plant species that have the ability to out-compete and displace coast buckwheat.

El Segundo blue butterflies are affected through competition, predation, and parasitism by other insect species that utilize coast buckwheat flower heads. Pratt (1987) observed numerous insects living in coast buckwheat inflorescences along with El Segundo blue butterfly larvae, including lepidopterous larvae in the families of Cochylidae, Gelechiidae, Geometridae, Riodinidae, and even other Lycaenidae.

Habitat fragmentation is detrimental to small, isolated populations. Urbanization and land conversion have fragmented the historic range of El Segundo blue butterflies such that extant populations now operate as independent units rather than parts of a metapopulation or a single, cohesive, wide-ranging population. Small populations have higher probabilities of extinction than larger populations because their low abundance renders them susceptible to inbreeding, loss of genetic variation, high variability in age and sex ratios, demographic stochasticity, and other random naturally occurring events such as droughts or disease epidemics (Soulé 1987). Isolated populations are more susceptible to elimination by stochastic events because the likelihood of recolonization following such events is negatively correlated with the extent of isolation (Wilcox and Murphy 1985). Given the low dispersal potential of El Segundo blue butterflies, it is unlikely that this species will naturally recolonize a site.

Newly discovered population at VAFB

The El Segundo blue butterfly was recently reported to occur at VAFB in 2005 by Dr. Gordon Pratt and in 2007 by Dr. Pratt and Dr. Richard Arnold (Pratt, pers. comm. 2006a; Bell, pers. comm. 2007). However, it is not completely clear if the individuals observed are actually the El Segundo blue butterfly or morphologically similar species. Based on wing morphology, flight period, genitalia, and host plant association; these individuals were determined to be more similar to the El Segundo blue butterfly than to any other known *E. battoides* group taxon (G. Ballmer, pers. comm. 2006; Pratt, pers. comm. 2006c). Therefore, we consider this species to be the El Segundo blue butterfly until we receive information stating otherwise. Given the geographic separation between VAFB and the El Segundo Dunes (approximately 120 miles) and the relatively limited dispersal capability of El Segundo blue butterflies, it is possible that the observed butterflies at VAFB are not El Segundo blue butterflies but rather an undescribed species. It is known that butterflies in the genus *Euphilotes* can be very similar morphologically yet significantly different genetically (Mattoni 1990; Pratt 1994). Conversely, it is also possible that suitable habitat for the El Segundo blue butterfly was once contiguous from the El Segundo sand dunes to Santa Barbara County and has been displaced in some areas by human actions.

The uncertain taxonomic status of the populations that were recently discovered at VAFB makes it impossible to assess whether the current distribution of the El Segundo blue butterfly is different from the range previously stated. To definitively determine the identity of these butterflies, VAFB has collected male individuals to compare the genetic signatures among the butterflies from VAFB with known El Segundo blue butterflies. However, clarifying the taxonomic status of these populations will not be trivial as *Euphilotes* is a diverse genus with known cryptic speciation (Mattoni 1988). Wing characters are notoriously unreliable due to individual variability, so single individuals usually cannot be confidently determined without other clues such as location, flight season, and larval host plant (Ballmer, pers. comm. 2006). Based on the most recent surveys in 2007, VAFB contains a tentative total of 17,470 possibly occupied acres, which was determined by buffering the known El Segundo blue butterfly localities by 1 mile (the approximate maximum dispersal distance).

Gaviota tarplant

Gaviota tarplant was federally listed as endangered on March 20, 2000 (65 Federal Register (FR) 14888). We designated critical habitat for the Gaviota tarplant on November 7, 2002 (67 FR 67968); Vandenberg Air Force Base was excluded from this designation under section 4(b)(2) of the Act. The species is also listed by the State of California as endangered.

Gaviota tarplant seeds germinate in response to significant rainfall. Seedlings have been observed as early as January (URS 1988). Plants grow through the spring and peak flowering ranges from late May to late July, depending on year. By late summer or fall, most plants have died although a few continue to flower and produce seed (AAPC 1992). Nearly all plants will have died by mid-October.

As is typical of annual plant species, the number of individuals present above-ground from one year to the next varies dramatically, most likely depending on climatic conditions such as amount of rainfall, timing of rainfall, and temperature regimes during critical stages of germination and seedling growth. In some years, patches may contain few to no individuals (Howald 1989), but a seed bank likely persists in the soil.

Gaviota tarplant has a highly localized distribution in western Santa Barbara County, where it is associated with grasslands comprised of native needlegrass (*Nassella* spp.), non-native wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), and other grasses and forbs. Grasslands intergrade with coastal sage scrub composed of California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), sawtooth golden bush (*Hazardia squarrosa*), and California buckwheat (*Eriogonum fasciculatum*) (CNDDB 2007). Until several years ago, populations of Gaviota tarplant were only known from marine terraces near Gaviota; however, populations were observed at seven new locations ranging westward from Gaviota, along the coast and in the Santa Ynez Mountains, to Point Arguello (Meyer, pers. comm. 2001; Hendrickson et al. 1998). In addition, the Air Force observed over 285 acres of occupied Gaviota tarplant habitat on VAFB in 2006.

Highway 101, a railroad, and several pipelines bisect the narrow coastal terrace at Gaviota lengthwise. Most of the habitat for Gaviota tarplant that lies on the north side of Highway 101 is on private lands owned by the petroleum industry. Petroleum companies have leased land at Government Point for their facilities, just east of Point Conception. A few colonies of Gaviota tarplant occur on the south side of Highway 101 on State-owned land managed by the California Department of Parks and Recreation. Most of the other populations west of Gaviota, except for the populations on VAFB, are located on private land.

Gaviota tarplant is known to occur on sandy soils associated with marine terraces and uplifted marine sediments, at elevations ranging from 151 feet above sea level (ASL) along the lowest terraces to 1,000 feet ASL (Hendrickson et al. 1998; CNDDB 2007; Wilken 1998). However, VAFB has observed Gaviota tarplant at elevations ranging from 40 feet ASL at Wall Beach to 1,440 feet ASL in the pastures on the ridge east of Tranquillion Mountain along the base boundary (Lum, pers. comm. 2007).

Soil characteristics have been studied most extensively near the Gaviota locations. There, the plant is restricted to Conception and Milpitas-Positas soils, which consist of acidic, fine, sandy loams (AAPC 1995). A subsurface clay layer 1 to 35 inches deep may serve as a reservoir of soil moisture in an area otherwise characterized by summer drought (Howald 1989). However, Gaviota tarplant consistently occurs where the depth to clay is only 1 to 2 inches (Rindlaub, in litt. 1998).

Threats to the Gaviota tarplant include destruction of individual plants, habitat loss, and habitat degradation from the development and decommissioning of oil and gas facilities, including pipelines, incompatible fire management practices, residential and commercial development, and competition with non-native weeds (65 FR 14888). Within the last five years, two aggressive non-native grasses, veldt grass (*Ehrharta calycina*) and harding grass (*Phalaris aquaticus*), have invaded the Gaviota coast and pose a serious threat to Gaviota tarplant and the remaining coastal prairie habitat at this site (Rindlaub, pers. comm. 2001; Meyer, pers. comm. 2001).

The populations near Point Conception and Government Point face similar threats to those in the Gaviota area, specifically from activities associated with the decommissioning of oil and gas facilities, and from alteration of habitat due to the spread of iceplant (*Carpobrotus* spp.) and veldt grass (Meyer, pers. comm. 2001). However, some of the populations found within the last three years are in remote areas in the Santa Ynez Mountains and do not appear to be threatened at this time.

Generally, Gaviota tarplant appears to have few predators. Grazing and browsing animals, such as horses, cattle, and deer avoid the strong smelling, resinous plants when feeding. Some predation on immature fruit (usually disk achenes) by small black flower beetles has been noted in wild populations (AAPC 1995).

Gaviota tarplant responds positively to some types of soil disturbance, which may increase seed coat permeability through abrasion. Light disturbance during the dry season, such as occasional

foot, livestock, or vehicular traffic seem to enhance tarplant growth. This is reflected by its distribution along footpaths, livestock trails, and roadsides (URS 1988; AAPC 1990). More intense disturbance, such as excavation of the soil profile, temporarily enhances germination but also may stimulate growth of competitive exotic species. Disturbance when the soil is wet is likely to kill tarplant seeds as well as young seedlings (AAPC 1995).

Overall, the Air Force has permanently removed at least 4.8 acres of tarplant through mission critical activities. We have not consulted on any other proposed projects within the range of the species. Given all other factors (e.g., competition from non-native plants), we conclude that the Gaviota tarplant population is stable throughout its range.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 C.F.R. 402.02). For the purpose of this biological opinion, and based on the information provided by the Air Force, we consider the action area to be approximately 20.3 acres, which includes the construction footprint of the second RIDT and all of the support facilities and mowed security clear zone.

Mantech SRS Technologies (MSRS) conducted surveys of the action area in May 2007. Aside from the existing concrete, buildings, and roads, two vegetation types were identified within the action area: non-native grassland (19.92 acres) and ruderal (0.34 acre). The non-native grassland habitat occurs most commonly in areas that have been subjected to prior disturbance, such as regular mowing activities and cattle grazing. Veldt grass dominates the non-native grassland within the action area, although diffuse stands of mock heather (*Ericameria ericoides*), California sagebrush (*Artemisia californica*), and poison-oak (*Toxicodendron pubescens*) are also present. Ruderal vegetation is found adjacent to roads and is also frequently subjected to disturbance. This habitat is dominated by low-growing herbaceous species, most of which are non-native, including iceplant and annual grasses and forbs.

Mowed and unmowed non-native grassland and ruderal vegetation represent suitable habitat for Gaviota tarplant. However, during the survey effort in May 2007, MSRS only documented 277 individuals covering 0.06 acre. These plants were primarily large and near flowering, although some smaller plants and seedlings were also observed. In October 2005, MSRS conducted surveys at the existing RIDT facility. They did not record the number of individual Gaviota tarplants present; however, the Gaviota tarplant stands were much more extensive than the 0.06 acre observed in May 2007 (MSRS 2007).

Currently, 5.92 acres of the action area consists of mowed non-native grassland that supports 0.06 acre of occupied Gaviota tarplant habitat observed by MSRS during the May 2007 survey. This area also contains the 1.12 acres of occupied habitat observed in October 2005. Cattle graze throughout the year on 14 acres of unmowed non-native grassland within the action area. MSRS

did not observe any Gaviota tarplant in the unmowed area or in the remaining 0.34 acre of ruderal vegetation.

The May 2007 survey occurred outside of the phase when El Segundo blue butterflies are typically active. No surveys have been conducted in the action area during the appropriate time period to detect active adults. MSRS documented 103 coast buckwheat plants (0.28 acre) scattered within the unmowed non-native grassland. Since the action area was surveyed during a time period when El Segundo blue butterflies are not observable, we do not have enough information to determine if the habitat is occupied. The action area contains lose, sandy soil similar to soils found in typical El Segundo blue butterfly habitat, but the habitat does not correspond to typical habitat identified on VAFB. The nearest documented occurrence of El Segundo blue butterfly was approximately 3.67 miles west of the project site (MSRS 2007).

EFFECTS OF THE ACTION

Constructing the second RIDT and the associated support facilities would adversely affect Gaviota tarplant habitat and individual plants. Constructing the buildings; installing concrete pads and the security fence; water, communication, and power lines; and a septic system would result in the permanent loss of Gaviota tarplant habitat and any individuals in those areas. In addition, maintaining the 50-foot security clear zone through routine maintenance could also adversely affect Gaviota tarplant because the MDA proposed to maintain the vegetation within this zone at a height of 4 inches or less. Thus, Gaviota tarplant individuals could be killed or flowering precluded if the maintenance activities occur during the germinating and blooming seasons. However, if the maintenance activities occur after Gaviota tarplants have senesced, individuals would not be killed or precluded from flowering. A vast majority of the action area that is not converted to concrete, buildings, or roads would be subject to routine mowing. Furthermore, Gaviota tarplant seeds could be crushed and soil hydrology may be altered because of compaction of the soils due to the various project activities.

Gaviota tarplant may benefit from the proposed project because this species responds positively to some form of soil disturbance as it increases seed coat permeability through abrasion and this may enhance germinability. However, substantial soil disturbance may also stimulate the growth of competitive exotic plant species. Additionally, disturbance when the soil is wet is likely to kill Gaviota tarplant seeds as well as young seedlings (AAPC 1995).

Constructing the second RIDT with the support facilities could adversely affect El Segundo blue butterfly individuals and habitat. Coast buckwheat plants are lightly scattered throughout the unmowed non-native grassland. Most of this area would be converted to either mowed non-native grassland or to concrete surfaces, buildings, and/or roads. If coast buckwheat plants exist where concrete structures and roads are proposed, the individual plants and habitat would be permanently lost. If coast buckwheat plants occur within an area proposed for routine maintenance activities, individual plants would be kept to a height of 4 inches or less, which could affect coast buckwheat's ability to flower and reproduce. These inabilities would result in a loss of El Segundo blue butterfly habitat because the butterfly solely depends upon coast

buckwheat plants to support all of its life stages. Moreover, the El Segundo blue butterfly could be injured or killed by moving vehicles and equipment. Adult El Segundo blue butterflies could disperse to nearby suitable habitat, if present, to avoid adverse effects from the proposed project. However, El Segundo blue butterflies have relatively limited dispersal capability; distances of greater than 656 feet are rare (Mattoni 1990).

In summary, constructing the second RIDT would permanently remove approximately 2.3 acres of Gaviota tarplant habitat due to the conversion of grassland to concrete surfaces, buildings, and roads. The 0.73 acre of occupied Gaviota tarplant habitat that occurs within the action area could either be part of the 2.3 acres of habitat permantenly removed or subject to routine mowing. In addition, the proposed project could result in the permanent loss of 0.28 acre of El Segundo blue butterfly habitat due to the installation of the second RIDT facilities and land use changes within the action area. Because the project site contains an existing RIDT with support facilities and these habitats have been historically mowed or subjected to cattle grazing, we assume the Gaviota tarplant and coast buckwheat occurs in disturbed, lower quality habitat. Coast buckwheat plants represent potential habitat for El Segundo blue butterflies and this habitat may be occupied. However, the action area has never been surveyed during the active phase when El Segundo blue butterflies are observable. Therefore, the proposed project could result in a permanent loss of El Segundo blue butterfly individuals.

To reduce their impacts to Gaviota tarplant and El Segundo blue butterflies, the Air Force and MDA proposed to implement measures that would minimize the adverse effects from the project activities on Gaviota tarplant and El Segundo blue butterfly. Furthermore, the Air Force and MDA proposed to enhance suitable habitat for Gaviota tarplant and El Segundo blue butterflies at a 1:1 ratio in a nearby area that is not likely to be designated for future development.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are not aware of any other non-Federal actions that are reasonably certain to occur in the action area.

CONCLUSION

After reviewing the current status of Gaviota tarplant and El Segundo blue butterfly, the environmental baseline, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the proposed project would not jeopardize the continued existence of the Gaviota tarplant or El Segundo blue butterfly. We have reached this conclusion because:

1. Only a very small amount of the total Gaviota tarplant and El Segundo blue butterfly habitat known throughout their respective ranges would be adversely affected.

2. The project site has historically been subjected to routine maintenance activities and cattle grazing, and for this reason, we assume Gaviota tarplant and coast buckwheat occur in disturbed, lower quality habitats.

3. The Air Force proposed to implement measures to minimize the adverse effects to Gaviota tarplant and El Segundo blue butterflies that would result from the project activities.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations promulgated pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Section 9 of the Act does not address the incidental take of listed plant species. Consequently, this biological opinion does not include an incidental take statement, reasonable and prudent measures, or terms and conditions for Gaviota tarplant. However, protection of listed plants is provided in that the Act requires a Federal permit for the removal or reduction to possession of endangered or threatened plants from Federal lands. Furthermore, it is unlawful for any person to remove, cut, dig up, or damage or destroy a listed plant species in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law [section 9(a)(2)(B) of the Act].

The measures described below are non-discretionary and must be undertaken by the Air Force for the exemption in section 7(o)(2) to apply. The Air Force has a continuing duty to regulate the activities covered by this incidental take statement. If the Air Force fails to assume and implement the terms and conditions of the incidental take statement, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Air Force must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

We anticipate that the proposed action may result in take of the El Segundo blue butterfly in the form of harm or mortality due to the removal and maintenance of coast buckwheat plants during

the proposed project. However, because of their cryptic nature, El Segundo blue butterflies are not easily found. El Segundo blue butterfly populations can fluctuate dramatically from one generation to another, from one place to another, and from one flowerhead to another (Arnold, pers. comm. 2007). Similarly, the number of flowerheads on coast buckwheat plants will vary as the plant matures and senesces during its lifetime, sometimes by an order of magnitude, even on the same plant due to the amount of annual rainfall (Arnold, pers. comm. 2007). Larvae that may occur at the project site could be parasitized and any estimate of El Segundo blue butterfly density could overestimate healthy individuals (Arnold, pers. comm. 2007). Furthermore, natural mortality of many butterfly species can approach 99 percent between adult generations (i.e. sum of mortalities for eggs, larvae, and pupae) (Arnold, pers. comm. 2007). Because of the difficulty in estimating population density based on the amount of suitable habitat available, we cannot accurately determine the number of El Segundo blue butterflies that may be taken by the proposed project. However, we expect that any El Segundo blue butterflies associated with the 103 coast buckwheat plants within the action area would be taken.

This incidental take statement does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. The El Segundo blue butterfly may be taken only within the defined boundaries of the action area as described in the Environmental Baseline section of this biological opinion.

REASONABLE AND PRUDENT MEASURES

We believe the following reasonable and prudent measures are necessary and appropriate to minimize take of El Segundo blue butterflies during implementation of the RIDT project:

1. The Air Force must use well-defined operational procedures, education programs, and qualified personnel to minimize the incidental take of El Segundo blue butterflies during implementation of the proposed project.

2. The Air Force must ensure that the level of incidental take that occurs during project implementation is commensurate with the analysis contained herein.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Air Force must comply with the following term and condition, which implements the reasonable and prudent measure described above. This term and condition is non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1.

    a. Qualified biologists, familiar with El Segundo blue butterfly, will provide a brief educational program for all personnel before any project activities occur within the action area. The Air Force must submit the credentials of individuals who

will conduct these programs to the Ventura Fish and Wildlife Office at least 15 days prior to the onset of these activities.

b. At a minimum, the educational program must include: 1) identification of the El Segundo blue butterfly and its host plant, coast buckwheat; 2) the general provisions and protections afforded by the Act; and, 3) the measures to be implemented during the project to avoid and minimize adverse effects to El Segundo blue butterfly.

2. The following term and condition implements reasonable and prudent measure 2.

We assume that the average coast buckwheat contains about 300 flowerheads and may produce 30 El Segundo blue butterfly adults. However, the population at VAFB occurs in much lower densities than other known populations (Pratt, pers. comm. 2007). Generally, El Segundo blue butterflies are not common anywhere they are observed. Thus, we assume that the average coast buckwheat within the action area could provide habitat for up to a maximum of 3 El Segundo blue butterfly adults.

If more than three (3) El Segundo blue butterflies are found dead or injured, the population in the action area is presumed to be greater than expected and the project activities would have resulted in a greater adverse effect than analyzed. Consequently, the Air Force must contact our office immediately so we can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by the Air Force and MDA and the terms and conditions of this biological opinion have been, and continue to be, implemented.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse affects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the Air Force include measures to conserve Gaviota tarplant and El Segundo blue butterfly in the Integrated Natural Resources Management Plan (INRMP) for Vandenberg Air Force Base.

2. We recommend that the Air Force continue surveys of any habitat areas at VAFB that contain coast buckwheat in order to refine areas that the El Segundo blue butterfly occupies.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the effects of the construction of a second RIDT at VAFB. Reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may adversely affect listed species or critical habitat in a manner or to an extent not considered in this biological and conference opinion; 3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this biological and conference opinion; or 4) a new species is listed or critical habitat designated that may be affected by this action (50 CFR 402.16).

If you have any questions, please contact Nic Huber of my staff at (805) 644-1766, extension 249.

Sincerely,

for Roger Root
Assistant Field Supervisor

LITERATURE CITED

All American Pipeline Company (AAPC). 1990. Progress report, Gaviota tarplant mitigation plan. August 10, 1990. Submitted to Non-game Heritage Division, California Department of Fish and Game and Energy Division, Resource Management Department, Santa Barbara County. 30pp.

All American Pipeline Company (AAPC). 1992. 1991 progress report, Gaviota tarplant mitigation plan. Submitted to Non-game Heritage Division, California Department of Fish and Game and Energy Division, Resource Management Department, Santa Barbara County. January 30, 1992. 25pp.

All American Pipeline Company (AAPC). 1995. Mitigation and management plan for Gaviota tarplant (*Hemizonia increscens ssp. villosa*). Report submitted to California Department of Fish and Game, Non-game Natural Heritage Division, Sacramento. 4pp.

California Natural Diversity Data Base (CNDDB). 2007. Rarefind: A database application for the California Department of Fish and Game, Natural Heritage Division data, California Natural Diversity Data Base, Sacramento.

Donahue, I. P. 1975. A report on the 24 species of California butterflies being considered for placement on the Federal lists of endangered or threatened species. Natural History Museum of Los Angeles County, Los Angeles, California. Unpublished report.

Hendrickson, B., W.R. Ferren Jr., and T. Klug. 1998. Botanical resources of the Hollister Ranch, Santa Barbara County, California. Prepared for Hollister Ranch Conservancy. Museum of Systematics and Ecology, Department of Ecology, Evolution, and Marine Biology, University of California Santa Barbara. Environmental report No. 10.

Howald, A. 1989. Report to the Fish and Game Commission on the status of Gaviota tarplant (*Hemizonia increscens* ssp. *villosa*). California Department of Fish and Game. Sacramento. 14pp.

Mattoni, R. 1988. The *Euphilotes battoides* complex: recognition of a species and description of a new subspecies. (*Lycaenidae*). Journal of Research on the Lepidoptera 27:173-185.

Mattoni, R. 1990. The endangered El Segundo blue butterfly. Journal of research on the Lepidoptera. Vol. 29(4): 277-304.

Pratt, G. 1987. Competition as a controlling factor of *Euphilotes battoides allyni* larval abundance (Lepidoptera: Lycaenidae). Atala, Journal of invertebrate conservation. Vol. 15(1-2): 1-9.

Pratt, G. F. 1994. Evolution of Euphilotes (Lepidoptera: Lycaenidae) by seasonal and host shifts. Biological Journal of the Linnean Society 51:387-416.

Rindlaub, K. 1998. Letter to the U.S. Fish and Wildlife Service on the proposed listing for Gaviota tarplant. Dated May 29, 1998.

Shields, 0. 1975. Studies on North American *Philotes*. IV. Taxonomic and biological notes, and new subspecies. Bull. Allyn Mus. 28. 36 pp.

Soulé, M. E. ed. 1987. Viable Populations for Conservation. Cambridge University Press, Cambridge, United Kingdom. 189 pp.

U.S. Fish and Wildlife Service. 1998. Recovery plan for the El Segundo blue butterfly (*Euphilotes battoides allyni*).

URS Consultants. 1988. Management of the Gaviota tarweed, *Hemizonia increscens ssp. villosa*. Prepared for Chevron U.S.A, Inc. 19pp.

Wilcox, B. A. and D. D. Murphy. 1985. Conservation strategies: the effects of fragmentation on extinction. The American Naturalist 125: 879-887.

Wilken, D. 1998. California native species field survey forms for *Deinandra increscens ssp. villosa*. Submitted to the Natural Diversity Data Base, California Department of Fish and Game. Dated August 18, 1998.

PERSONAL COMMUNICATION

Arnold, R. 2007. Electronic mail. Density of Euphilotes on coast buckwheat. Dated September 14, 2007. Entomological Consulting Services, Ltd. Pleasant Hill, California.

Ballmer, G. 2007. Electronic mail. El Segundo blue butterfly identification. Dated August 25, 2007. Department of Entomology, University of California Riverside.

Bell, L. 2007. Electronic mail. El Segundo blue butterfly counts on VAFB. Dated July 5, 2007. Biologist. Vandenberg Air Force Base, Santa Barbara County.

Lum, L. 2007. Electronic Mail. Elevations at which Gaviota tarplant was observed. Dated July 13, 2007. Botanist. Vandenberg Air Force Base, Santa Barbara County.

Meyer, M. 2001. Telephone conversation. Gaviota tarplant. Dated April 30, 2001. Plant Ecologist, California Department of Fish and Game. Ventura, California.

Pratt, G. 2006a. Personal communication. El Segundo blue butterflies observed at VAFB. Dated December 19, 2006. Department of Entomology, University of California Riverside.

Pratt, G. 2006b. Electronic mail. El Segundo blue butterflies at VAFB. Dated August 31, 2006. Department of Entomology, University of California Riverside.

Pratt, G. 2006c. Electronic mail. El Segundo blue butterfly identification. Dated August 24, 2007. Department of Entomology, University of California Riverside.

Pratt, G. 2007. Electronic mail. Density of Euphilotes on coast buckwheat. Dated September 14, 2007. Department of Entomology, University of California Riverside.

Rindlaub, K. 2001. Telephone conversation. Gaviota tarplant. Dated May 1, 2001. Botanic consultant.

APPENDIX B

STATE HISTORIC PRESERVATION OFFICER CORRESPONDENCE

STATE OF CALIFORNIA – THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

May 29, 2007 In reply refer to: USAF070423A

Richard N. Cote, P.E.
Deputy Base Civil Engineer
US Department of the Air Force
30th Space Wing (AFSPC)
30 CES/CD
1172 Iceland Avenue
Vandenberg AFB, CA 93437-6012

Re: Reuse of Minuteman Silo LF-24 and Construction of a Second Relocatable In-Flight Interceptor Communications System Data Terminal, Vandenberg Air Force Base, Santa Barbara County, California

Dear Mr. Cote:

Thank you for your letter of 18 April 2007, requesting my comments regarding the referenced undertaking. You are consulting with me in order to comply with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended, and its implementing regulation at 36 CFR Part 800.

The Air Force proposes to construct a second Relocatable In-Flight Interceptor Communications System Data Terminal (RIDT2) adjacent to an RIDT facility that was the subject of a June 2004 consultation (USAF030613A) and the refurbishment and reuses of Launch Facility 24 (LF-24), a Minuteman II launch silo built in 1965. The Air Force has determined the area of potential effects (APE) for RIDT2 to include the area of construction as well as a corridor for utility connections. The APE for the LF-24 reuse corresponds to the area disturbed when the launch facility was originally constructed. Based upon a review of the materials you submitted with your 18 April 2007 letter, I agree that the Air Force has properly determined and documented the APE in accordance with 36 CFR § 800.4(a)(1). The Air Force has surveyed the APE and has determined that there are no historic properties within the RIDT2 project area. Although LF-24 was determined not eligible for inclusion in the National Register through consensus in 2002, it is located within the boundary of CA-SBA-3288/H, an archaeological site that contains both prehistoric and historic components. Another archaeological site, a lithic scatter identified as CA-SBA-2164, is located about 100 meters from LF-24, but outside of the project APE. Neither CA-SBA-3288/H nor CA-SBA-2164 have been formally evaluated for inclusion in the National Register, however, the Air Force proposes to assume the sites are eligible for the purposes of the undertaking. I have no objections with this assumption with the understanding that this agreement is for this undertaking only and should not be construed as my concurrence with the National Register eligibility of either site. Because the undertaking, as proposed, will not alter any of the characteristics that may qualify the properties for

RICHARD N. COTE
MAY 29, 2007
2 OF 2

USAF070423A

inclusion in he National Register, the Air Force has determined that the undertaking will not adversely affect historic properties. Based on a review of the materials you included with your 18 April 2007 letter, along with subsequent information sent via email from Dr. James Carrucci, VAFB staff archaeologist, to David Byrd of my staff, I can concur that a Finding of No Adverse Effects is appropriate, per 36 CFR § 800.5(b).

Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns, please contact David Byrd, Project Review Unit historian, at (916) 653-9019 or at dbyrd@parks.ca.gov or William Soule, at (916) 654-4614 or wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

MWD:db

This page intentionally left blank.